Analytical and Quality Control Report

William Little WTS P.O. Box 363 Building 126 3RD Floor WSMR, NM, 88002

Report Date: January 5, 2007

Work Order: 6121323

Project Name:

HELSTF Groundwater Samples

Project Number: 7

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	111116	Date
Sample	Description	Matrix	Taken	Taken	Received
111619	HLSF-0085-HMW-057-1206	water	2006-12-11	13:17	2006-12-12
111620	HLSF-0085-TB-789-1206	water	2006-12-11	13:17	2006-12-12

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 56 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Michael abril

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 2 of 56

Analytical Report

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch: Prep Batch:

Ag, Dissolved 32994

28613

Analytical Method: Date Analyzed:

S 6010B 2006-12-20 2006-12-18 Prep Method:

S 3005A RR

Analyzed By: Prepared By: TS

RL

Sample Preparation:

Parameter Dissolved Silver Flag

Result < 0.00200 Units mg/L

Dilution

RL0.00200

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch: Ag, Total 33098

28574

Analytical Method: Date Analyzed:

S 6010B 2006-12-26 Prep Method: Analyzed By:

S 3010A RR

Sample Preparation:

2006-12-15

Prepared By:

TS

RL

Parameter Total Silver

Prep Batch:

Flag

Result < 0.00200

Units mg/L Dilution

RL0.00200

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch:

Prep Batch:

Alkalinity 32918

28627

Analytical Method: Date Analyzed:

SM 2320B 2006-12-15 Sample Preparation: 2006-12-15 Prep Method: N/A

Analyzed By: JG

Prepared By: JR

Βī

		KL			
Parameter	Flag	Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Bicarbonate Alkalinity		234	mg/L as CaCo3	1	4.00
Total Alkalinity		234	mg/L as CaCo3	1	4.00

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch:

Prep Batch:

28703

Ammonia 33017

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-NH3 B,C 2006-12-21 2006-12-21

Prep Method: N/A Analyzed By: SM

SM

Prepared By:

RL

Dilution RL Result Units Flag Parameter 1.00 <1.00 mg/L Ammonia-N

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 3 of 56

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch: As, Dissolved 32994

Prep Batch: 28613

Analytical Method: Date Analyzed:

S 6010B 2006-12-20 Sample Preparation:

2006-12-18

Prep Method: Analyzed By:

S 3005A RR

TS Prepared By:

RL

Parameter Dissolved Arsenic

Result Flag < 0.00500

Units mg/L

Dilution

RL 0.00500

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch:

Prep Batch:

As, Total 33098 28574

Analytical Method: Date Analyzed:

S 6010B 2006-12-26 2006-12-15

S 3010A Prep Method: Analyzed By:

RR Prepared By: TS

RL

Sample Preparation:

Parameter Total Arsenic Flag

Result < 0.0100 Units mg/L Dilution 1 RL

0.0100

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch:

Prep Batch:

Dissolved Barium

Ba, Dissolved 32994 28613

Analytical Method: Date Analyzed:

S 6010B 2006-12-20 2006-12-18 Prep Method: Analyzed By:

S 3005A RR

Prepared By:

TS

Flag Parameter

Flag

RLResult < 0.0100

Sample Preparation:

Units mg/L Dilution

RL 0.0100

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch:

Prep Batch:

Ba, Total 33098 28574

Analytical Method: Date Analyzed:

S 6010B 2006-12-26 2006-12-15

S 3010A Prep Method: RR Analyzed By:

Prepared By: TS

RL

Sample Preparation:

Parameter Total Barium

Result < 0.0100

Units

mg/L

Dilution RL

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch:

Prep Batch:

Parameter

Bromide

Bromide (IC)

33182 28842 Analytical Method: Date Analyzed:

Sample Preparation:

E 300.0 2006-12-27 2006-12-27

N/A Prep Method: Analyzed By: WB WB Prepared By:

Flag <1.00

RL Result

Units mg/L

Dilution 5 RL

0.0100

0.200

Work Order: 6121323 HELSTF Groundwater Samples Page Number: 4 of 56

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Cd, Dissolved QC Batch: 32994 Prep Batch: 28613 Analytical Method: S 6010B Date Analyzed: 2006-12-20 Sample Preparation: 2006-12-18 Prep Method: S 3005A Analyzed By: RR Prepared By: TS

RL

ParameterFlagResultUnitsDilutionRLDissolved Cadmium<0.00100</td>mg/L10.00100

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Cd, Total QC Batch: 33098
Prep Batch: 28574

Analytical Method: S 6010B
Date Analyzed: 2006-12-26
Sample Preparation: 2006-12-15

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Conductivity QC Batch: 32909 Prep Batch: 28617 Analytical Method: SM 2510B Date Analyzed: 2006-12-13 Sample Preparation: 2006-12-13 Prep Method: N/A
Analyzed By: DR
Prepared By: JR

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Cr, Dissolved QC Batch: 32994
Prep Batch: 28613

Analytical Method: S 6010B
Date Analyzed: 2006-12-20
Sample Preparation: 2006-12-18

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Cr, Total QC Batch: 33098 Prep Batch: 28574 Analytical Method: S 6010B
Date Analyzed: 2006-12-26
Sample Preparation: 2006-12-15

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 5 of 56

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch:

Prep Batch:

7

Cu, Dissolved 32994

28613

Analytical Method: Date Analyzed:

Sample Preparation:

S 6010B 2006-12-20 2006-12-18 Prep Method: S 3005A Analyzed By:

RR TS Prepared By:

Flag Parameter Dissolved Copper

RL Units Dilution RLResult 0.0125 < 0.0125 mg/L

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch: Cu, Total 33098

Analytical Method: Date Analyzed:

S 6010B 2006-12-26

S 3010A Prep Method: Analyzed By: RR

28574 Prep Batch:

Sample Preparation:

2006-12-15

Prepared By: TS

Flag Parameter Total Copper

RL Result < 0.00500

Units mg/L Dilution

RL0.00500

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch:

Prep Batch:

Hg, Total 32862 28579

Analytical Method:

RL

S 7470A Date Analyzed: 2006-12-15 2006-12-14 Sample Preparation:

Prep Method: N/A TS Analyzed By:

Prepared By: TS

Flag Result Parameter < 0.000200 Total Mercury

Units Dilution mg/L

RL0.000200

WB

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: OC Batch: Prep Batch:

QC Batch:

Ion Chromatography 33006 28666 33182 Prep Batch: 28842

Analytical Method: Date Analyzed:

Sample Preparation:

Sample Preparation:

Date Analyzed:

E 300.0 2006-12-15 2006-12-15

2006-12-27 2006-12-27

Prep Method: N/A Analyzed By: WB Prepared By: WB Analyzed By: WB

Prepared By:

RL RLDilution Flag Result Units Parameter 0.500 50 Chloride 1930 mg/L 0.200 1.65 mg/L 5 Fluoride 500 0.500 mg/L 9670 Sulfate

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch:

Prep Batch: 28613

Na, Dissolved 33035

Analytical Method: Date Analyzed:

S 6010B 2006-12-21 Sample Preparation: 2006-12-18

S 3005A Prep Method: Analyzed By: RR

TS

Prepared By:

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 6 of 56

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Dissolved Sodium		2760	mg/L	10	0.500

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis:	Na, Total
QC Batch:	33125
Prep Batch:	28574

Analytical Method: S 6010B Date Analyzed: 2006-12-27 Sample Preparation: 2006-12-15

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Total Sodium		2840	mg/L	1	0.500

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis:	Nitrate and Nitrite as N
QC Batch:	33128
Prep Batch:	28801

Analytical Method: E 353.3 Date Analyzed: 2006-12-26 Sample Preparation: 2006-12-26

Prep Method: N/A Analyzed By: JS Prepared By: JS

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Nitrate and Nitrite as N		46.9	mg/L	200	0.100

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: QC Batch: Prep Batch:	NO2 (IC) 33182 28842		Analytical Method: Date Analyzed: Sample Preparation:	2006-12-27		Prep Method: Analyzed By: Prepared By:	WB
			RL				
Parameter		Flag	Result	Units	Dilution		RL
Nitrite-N			< 1.00	mg/L	5		0.200

Sample: 111	1619 - HLSF-0085-HMV	V-057-1206			
Analysis:	NO3 (IC)	Analytical Method:	E 300.0	Prep	Method: N/A
QC Batch:	33182	Date Analyzed:	2006-12-27	Ana	yzed By: WB
Prep Batch:	28842	Sample Preparation:	2006-12-27	Prep	ared By: WB
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Nitrate-N		36.7	mg/L	5	0.200

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Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: P, Total QC Batch: 33098 Prep Batch: 28574

7

Analytical Method: S 6010B Date Analyzed: 2006-12-26 Sample Preparation: 2006-12-15 Prep Method: S 3010A Analyzed By: RR Prepared By: TS

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Pb, Dissolved QC Batch: 32994
Prep Batch: 28613

Analytical Method: S 6010B
Date Analyzed: 2006-12-20
Sample Preparation: 2006-12-18

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

 RL

 Parameter
 Flag
 Result
 Units
 Dilution
 RL

 Dissolved Lead
 <0.00500</td>
 mg/L
 1
 0.00500

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Pb, Total QC Batch: 33098 Prep Batch: 28574 Analytical Method: S 6010B
Date Analyzed: 2006-12-26
Sample Preparation: 2006-12-15

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: pH QC Batch: 32903 Prep Batch: 28611 Analytical Method: SM 4500-H+
Date Analyzed: 2006-12-12
Sample Preparation: 2006-12-12

Prep Method: N/A
Analyzed By: JG
Prepared By: JR

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Se, Dissolved QC Batch: 32994 Prep Batch: 28613 Analytical Method: S 6010B
Date Analyzed: 2006-12-20
Sample Preparation: 2006-12-18

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Work Order: 6121323 **HELSTF** Groundwater Samples

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Sample: 111619 - HLSF-0085-HMW-057-1206

Se, Total Analysis: QC Batch: 33098 Prep Batch: 28574

S 6010B Analytical Method: Date Analyzed: 2006-12-26 Sample Preparation: 2006-12-15 Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL

Flag Units Dilution RLResult Parameter 0.0100 < 0.0100 mg/L Total Selenium

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: **TDS** QC Batch: 33073 Prep Batch: 28749 Analytical Method: SM 2540C Date Analyzed: 2006-12-22 Sample Preparation: 2006-12-14

Prep Method: N/A Analyzed By: JG Prepared By: JR

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Total Dissolved Solids		14500	mg/L	1	5.00

Sample: 111619 - HLSF-0085-HMW-057-1206

Volatiles WTS Analysis: 32895 QC Batch: Prep Batch: 28606

S 8260B Analytical Method: Date Analyzed: 2006-12-16 Sample Preparation: 2006-12-16 Prep Method: S 3510C Analyzed By: JG Prepared By: JG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	μg/L	1	1.00
Dichlorodifluoromethane		< 1.00	$\mu { m g/L}$	1	1.00
Chloromethane (methyl chloride)		< 1.00	μ g/L	l	1.00
Vinyl Chloride		<1.00	μ g/L	1	1.00
Bromomethane (methyl bromide)		< 5.00	$\mu \mathrm{g}/\mathrm{L}$	1	5.00
Chloroethane		<1.00	$\mu \mathrm{g/L}$	1	1.00
Trichlorofluoromethane		< 1.00	μ g/L	1	1.00
Acetone		< 10.0	μ g/L	1	10.0
Iodomethane (methyl iodide)		< 5.00	$\mu \mathrm{g}/\mathrm{L}$	ĺ	5.00
Carbon Disulfide		< 1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
Acrylonitrile		< 1.00	$\mu \mathrm{g/L}$	1	1.00
2-Butanone (MEK)		< 5.00	μ g/L	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	$\mu\mathrm{g}/\mathrm{L}$	1	5.00
2-Hexanone		< 5.00	μ g/L	1	5.00
trans 1,4-Dichloro-2-butene		< 10.0	μ g/L	1	10.0
1,1-Dichloroethene		< 1.00	$\mu \mathrm{g/L}$	1	1.00
Methylene chloride		< 5.00	μ g/L	1	5.00
MTBE		< 1.00	$\mu { m g/L}$	1	1.00
trans-1,2-Dichloroethene		<1.00	$\mu { m g/L}$	1	1.00
1,1-Dichloroethane		< 1.00	μg/L	1	1.00
cis-1,2-Dichloroethene		< 1.00	$\mu { m g/L}$	1	1.00
2,2-Dichloropropane		<1.00	μ g/L	1	1.00
1,2-Dichloroethane (EDC)		<1.00	μg/L	1	1.00

continued ...

sample 111619 continued...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloroform		<1.00	μg/L	1	1.00
1,1,1-Trichloroethane		<1.00	μ g/L	1	1.00
1,1-Dichloropropene		< 1.00	μ g/L	1	1.00
Benzene		< 1.00	μ g/L	1	1.00
Carbon Tetrachloride		<1.00	μ g/L	1	1.00
1,2-Dichloropropane		< 1.00	$\mu { m g/L}$	1	1.00
Trichloroethene (TCE)		< 1.00	μg/L	1	1.00
Dibromomethane (methylene bromide)		<1.00	μ g/L	1	1.00
Bromodichloromethane		< 1.00	μ g/L	1	1.00
2-Chloroethyl vinyl ether		< 5.00	μg/L	ì	5.00
cis-1,3-Dichloropropene		< 1.00	μg/L	1	1.00
trans-1,3-Dichloropropene		<1.00	μg/L	1	1.00
Toluene		<1.00	$\mu { m g/L}$	*	1.00
1,1,2-Trichloroethane		< 1.00	μg/L	1	1.00
1,3-Dichloropropane		< 1.00	μg/L	1	1.00
Dibromochloromethane		<1.00	μg/L	1	1.00
1,2-Dibromoethane (EDB)		<1.00	μg/L	1	1.00
Tetrachloroethene (PCE)		< 1.00	μg/L	1	1.00
Chlorobenzene		<1.00	μg/L	1	1.00
1,1,1,2-Tetrachloroethane		<1.00	μg/L	1	1.00
Ethylbenzene		<1.00	μg/L	1	1.00
m,p-Xylene		<1.00	μg/L	1	1.00
Bromoform		<1.00	μg/L	1	1.00
Styrene		<1.00	$\mu \mathrm{g/L}$	1	1.00
o-Xylene		<1.00	μg/L	î	1.00
1,1,2,2-Tetrachloroethane		<1.00	μg/L	ì	1.00
2-Chlorotoluène		<1.00	μg/L	Î	1.00
1,2,3-Trichloropropane		<1.00	μg/L	1	1.00
Isopropylbenzene		<1.00	μg/L	1	1.00
Bromobenzene		<1.00	μg/L	1	1.00
n-Propylbenzene		<1.00	μg/L	1	1.00
1,3,5-Trimethylbenzene		<1.00	μg/L	i	1.00
tert-Butylbenzene		<1.00	μg/L	1	1.00
1,2,4-Trimethylbenzene		<1.00	μg/L	1	1.00
1,4-Dichlorobenzene (para)		<1.00	μg/L	•	1.00
sec-Butylbenzene		<1.00	μg/L μg/L	1	1.00
1,3-Dichlorobenzene (meta)		<1.00	μg/L	1	1.00
		<1.00	μg/L μg/L	1	1.00
p-Isopropyltoluene 4-Chlorotoluene		<1.00	μg/L	1	1.00
		<1.00	μg/L	1	1.00
1,2-Dichlorobenzene (ortho)		<1.00		1	1.00
n-Butylbenzene		<5.00	μg/L	1	5.00
1,2-Dibromo-3-chloropropane		<5.00	μg/L	i 1	5.00
1,2,3-Trichlorobenzene			μg/L	1	5.00
1,2,4-Trichlorobenzene		<5.00	μg/L	1	5.00
Naphthalene		<5.00	μg/L	i !	5.00
Hexachlorobutadiene		< 5.00	μg/L	i	
Isopropyl Alcohol		64.6	μg/L	1	5.00
Tert-butyl Alcohol		< 5.00	μg/L	J 1	5.00
1,4-Dioxane		< 5.00	μg/L	<u> </u>	5.00

Work Order: 6121323 HELSTF Groundwater Samples

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.8	μg/L	i	50.0	106	82.4 - 115
Toluene-d8		50.7	$\mu \mathrm{g/L}$	1	50.0	101	89.7 - 108
4-Bromofluorobenzene (4-BFB)		44.1	μg/L	1	50.0	88	84.6 - 114

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Zn, Dissolved QC Batch: 32994 Prep Batch: 28613 Analytical Method: S 6010B
Date Analyzed: 2006-12-20
Sample Preparation: 2006-12-18

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Sample: 111619 - HLSF-0085-HMW-057-1206

Analysis: Zn, Total QC Batch: 33098 Prep Batch: 28574 Analytical Method: S 6010B
Date Analyzed: 2006-12-26
Sample Preparation: 2006-12-15

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

Sample: 111620 - HLSF-0085-TB-789-1206

Analysis: Volatiles WTS QC Batch: 33096 Prep Batch: 28772 Analytical Method: S 8260B
Date Analyzed: 2006-12-20
Sample Preparation: 2006-12-20

Prep Method: \$ 3510C Analyzed By: JG Prepared By: JG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	μg/L	1	1.00
Dichlorodifluoromethane		< 1.00	μ g/L	ĺ	1.00
Chloromethane (methyl chloride)		<1.00	μ g/L	1	1.00
Vinyl Chloride		<1.00	$\mu { m g/L}$	1	1.00
Bromomethane (methyl bromide)		< 5.00	$\mu { m g/L}$	***	5.00
Chloroethane		< 1.00	μ g/L	i	00.1
Trichlorofluoromethane		<1.00	$\mu { m g/L}$	1	1.00
Acetone		26.6	μg/L	1	10.0
Iodomethane (methyl iodide)		< 5.00	$\mu { m g/L}$	1	5.00
Carbon Disulfide		< 1.00	$\mu { m g/L}$	1	1.00
Acrylonitrile		<1.00	$\mu { m g/L}$	1	1.00
2-Butanone (MEK)		< 5.00	μ g/L	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	μ g/L	1	5.00
2-Hexanone		< 5.00	$\mu { m g/L}$	1	5.00
trans 1,4-Dichloro-2-butene		< 10.0	μ g/L	1	10.0
1,1-Dichloroethene		<1.00	μg/L	1	1.00

continued ...

sample 111620 continued ...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Methylene chloride		< 5.00	μg/L	l	5.00
MTBE		<1.00	μg/L	ì	1.00
trans-1,2-Dichloroethene		<1.00	$\mu \mathrm{g/L}$	1	1.00
1,1-Dichloroethane		<1.00	μg/L	1	1.00
cis-1,2-Dichloroethene		<1.00	μg/L	1	1.00
2,2-Dichloropropane		<1.00	μg/L	1	1.00
1,2-Dichloroethane (EDC)		<1.00	μg/L	1	1.00
Chloroform		<1.00	μg/L	1	1.00
1,1,1-Trichloroethane		<1.00	μg/L	1	1.00
· ·		<1.00	μg/L	1	1.00
1,1-Dichloropropene		<1.00	μg/L	1	1.00
Benzene Carbon Tetrachloride		<1.00	μg/L	1	1.00
		<1.00	μg/L	1	1.00
1,2-Dichloropropane		<1.00	μg/L	1	1.00
Trichloroethene (TCE)		<1.00	μg/L	1	1.00
Dibromomethane (methylene bromide) Bromodichloromethane		<1.00	μg/L	1	1.00
		<5.00	μg/L	1	5.00
2-Chloroethyl vinyl ether		<1.00	μg/L	1	1.00
cis-1,3-Dichloropropene		<1.00	μg/L	1	1.00
trans-1,3-Dichloropropene		<1.00	μg/L	1	1.00
Toluene		<1.00	μg/L	1	1.00
1,1,2-Trichloroethane		<1.00	μg/L μg/L	1	1.00
1,3-Dichloropropane		<1.00	μg/L μg/L	1	1.00
Dibromochloromethane		<1.00	μg/L μg/L	1	1.00
1,2-Dibromoethane (EDB)		<1.00	μg/L	1	1.00
Tetrachloroethene (PCE)		<1.00	μg/L μg/L	1	1.00
Chlorobenzene		<1.00	μg/L	1	1.00
1,1,1,2-Tetrachloroethane		<1.00	μg/L μg/L	, 1	1.00
Ethylbenzene		<1.00	μg/L μg/L	1	1.00
m,p-Xylene		<1.00	μg/L	1	1.00
Bromoform		<1.00	μg/L	1	1.00
Styrene		<1.00	μg/L	1	1.00
o-Xylene		<1.00		1	1.00
1,1,2,2-Tetrachloroethane		<1.00	μg/L	1	1.00
2-Chlorotoluene			μg/L	1	1.00
1,2,3-Trichloropropane		<1.00	μg/L	1	1.00
Isopropylbenzene		<1.00 <1.00	μg/L	1	1.00
Bromobenzene			μg/L	1	1.00
n-Propylbenzene		<1.00	μg/L	1	1.00
1,3,5-Trimethylbenzene		<1.00	μg/L	1	1.00
tert-Butylbenzene		<1.00	μg/L	1	1.00
1,2,4-Trimethylbenzene		<1.00	μg/L	1	1.00
1,4-Dichlorobenzene (para)		<1.00	μg/L	1 1	1.00
sec-Butylbenzene		<1.00	μg/L	Ī	1.00
1,3-Dichlorobenzene (meta)		<1.00	μg/L	1	
p-Isopropyltoluene		<1.00	μg/L	Į 1	1.00
4-Chlorotoluene		<1.00	μg/L	1	1.00
1,2-Dichlorobenzene (ortho)		< 1.00	μ g/L	1	1.00
n-Butylbenzene		< 1.00	$\mu \mathrm{g/L}$	Į,	1.00
1,2-Dibromo-3-chloropropane		< 5.00	μ g/L	<u> </u>	5.00

continued . . .

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sample 111620 continued...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
1,2,3-Trichlorobenzene		< 5.00	μg/L	1	5.00
1,2,4-Trichlorobenzene		< 5.00	μ g/L	1	5.00
Naphthalene		< 5.00	μ g/L	1	5.00
Hexachlorobutadiene		< 5.00	μ g/L	1	5.00
Isopropyl Alcohol		201	μ g/L	1	5.00
Tert-butyl Alcohol		15.6	μ g/L	1	5.00
1,4-Dioxane		< 5.00	μ g/L	1	5.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	82.4 - 115
Toluene-d8		49.8	μ g/L	1	50.0	100	89.7 - 108
4-Bromofluorobenzene (4-BFB)		46.7	$\mu \mathrm{g/L}$	1	50.0	93	84.6 - 114

Method Blank (1) QC Batch: 32862

QC Batch: 32862

Date Analyzed:

2006-12-15

Analyzed By: TS

Prep Batch:

28579

QC Preparation:

2006-12-15

Prepared By: TS

MDL

 Parameter
 Flag
 Result
 Units
 RL

 Total Mercury
 <0.0000217</td>
 mg/L
 0.0002

Method Blank (1) QC Batch: 32895

QC Batch: 32895 Prep Batch: 28606

95 Date

Date Analyzed: 2006-12-16 QC Preparation: 2006-12-16 Analyzed By: JG

Prepared By:

MDL Flag Result

Parameter	Flag	Result	Units	RL
Bromochloromethane		< 0.0699	μg/L	1
Dichlorodifluoromethane		< 0.0598	μ g/L	1
Chloromethane (methyl chloride)		< 0.230	$\mu \mathrm{g/L}$	1
Vinyl Chloride		< 0.0902	μg/L	1
Bromomethane (methyl bromide)		< 0.740	μg/L	5
Chloroethane		< 0.195	μ g/L	l
Trichlorofluoromethane		< 0.160	μg/L	l
Acetone		< 0.854	μ g/L	10
lodomethane (methyl iodide)		< 0.112	μ g/L	5
Carbon Disulfide		< 0.0764	$\mu { m g/L}$	1
Acrylonitrile		< 0.184	$\mu \mathrm{g/L}$	1
2-Butanone (MEK)		< 0.394	μg/L	5
4-Methyl-2-pentanone (MIBK)		< 0.484	$\mu \mathrm{g/L}$	5
2-Hexanone		< 0.0975	μ g/L	5
trans 1,4-Dichloro-2-butene		< 0.420	μ g/L	10
1,1-Dichloroethene		< 0.0736	$\mu { m g/L}$	1
Methylene chloride		1.19	µg/L	5

continued ...

method blank continued ...

		MDL		
Parameter	Flag	Result	Units	RL
MTBE		< 0.0504	$\mu \mathrm{g/L}$	1
trans-1,2-Dichloroethene		< 0.0598	μg/L	1
1,1-Dichloroethane		< 0.0299	μg/L	1
cis-1,2-Dichloroethene		< 0.101	$\mu \mathrm{g}/\mathrm{L}$	1
2,2-Dichloropropane		< 0.0665	μg/L	1
1,2-Dichloroethane (EDC)		< 0.0557	$\mu { m g/L}$	1
Chloroform		< 0.0475	μg/L	1
1,1,1-Trichloroethane		< 0.0846	μg/L	1
1,1-Dichloropropene		< 0.0423	μg/L	1
Benzene		< 0.0495	μg/L	1
Carbon Tetrachloride		< 0.121	$\mu \mathrm{g/L}$	1
1,2-Dichloropropane		< 0.0933	$\mu { m g/L}$	1
Trichloroethene (TCE)		< 0.0495	$\mu { m g/L}$	1
Dibromomethane (methylene bromide)		< 0.0640	$\mu \mathrm{g}/\mathrm{L}$	1
Bromodichloromethane		< 0.0651	μg/L	1
2-Chloroethyl vinyl ether		< 0.0905	μg/L	5
cis-1,3-Dichloropropene		< 0.0640	μg/L	1
trans-1,3-Dichloropropene		< 0.0504	$\mu { m g/L}$	1
Toluene		0.390	$\mu \mathrm{g}/\mathrm{L}$	1
1,1,2-Trichloroethane		< 0.106	μ g/L	1
1,3-Dichloropropane		< 0.0625	μg/L	1
Dibromochloromethane		< 0.0791	μg/L	1
1,2-Dibromoethane (EDB)		< 0.0460	$\mu \mathrm{g/L}$	1
Tetrachloroethene (PCE)		< 0.0696	μg/L	1
Chlorobenzene		< 0.0217	μg/L	1
1,1,1,2-Tetrachloroethane		< 0.125	μg/L	1
Ethylbenzene		< 0.0566	μg/L	1
m,p-Xylene		< 0.0363	μ g/L	1
Bromoform		< 0.0859	μg/L	1
Styrene		< 0.0394	μg/L	1
o-Xylene		< 0.0505	μg/L	1
1,1,2,2-Tetrachloroethane		< 0.0672	μg/L	1
2-Chlorotoluene		< 0.0283	μg/L	1
1,2,3-Trichloropropane		< 0.0679	jig/L	1
Isopropylbenzene		< 0.0406	μ g/L	1
Bromobenzene		< 0.103	μ g/L	1
n-Propylbenzene		< 0.0423	μg/L	1
1,3,5-Trimethylbenzene		< 0.0557	μg/L	i
tert-Butylbenzene		< 0.0770	μg/L	1
1,2,4-Trimethylbenzene		< 0.0336	μg/L	1
1,4-Dichlorobenzene (para)		< 0.0672	μg/L	1
sec-Butylbenzene		< 0.0439	μg/L	1
1,3-Dichlorobenzene (meta)		< 0.0672	$\mu { m g/L}$	1
p-Isopropyltoluene		< 0.0513	$\mu \mathrm{g/L}$	1
4-Chlorotoluene		< 0.0460	μg/L	1
1,2-Dichlorobenzene (ortho)		< 0.0629	μg/L	1
n-Butylbenzene		< 0.0400	μ g/L	i
1,2-Dibromo-3-chloropropane		< 0.538	μg/L	5
1,2,3-Trichlorobenzene		< 0.504	μg/L	5
1,2,4-Trichlorobenzene		< 0.166	μg/L	5

continued . . .

HELSTF Groundwater Samples

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memou ounik commueu	method	blank	continued			
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7

		MDL		
Parameter	Flag	Result	Units	RL
Naphthalene		< 0.417	μ g/L	5
Hexachlorobutadiene		< 0.176	μ g/L	5
Isopropyl Alcohol		< 5.00	μ g/L	5
Tert-butyl Alcohol		< 5.00	μ g/L	5
1,4-Dioxane		< 5.00	μg/L	5

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane		51.8	μg/L	1	50.0	104	82.4 - 115
Toluene-d8		52.1	μ g/L	l	50.0	104	89.7 - 108
4-Bromofluorobenzene (4-BFB)		45.6	$\mu \mathrm{g/L}$	1	50.0	91	84.6 - 114

Method Blank (1) QC Batch: 32909

Date Analyzed: QC Batch: 32909 Prep Batch: 28617

2006-12-13 QC Preparation: 2006-12-13 Analyzed By: DR Prepared By: DR

MDL Result Units RLParameter Flag 0.00 μMHOS/cm Specific Conductance

Method Blank (1) QC Batch: 32918

QC Batch: 32918 Date Analyzed: 2006-12-15 28627 QC Preparation: 2006-12-15 Prep Batch:

Analyzed By: JG Prepared By: JG

MDL Units RLResult Parameter Flag <1.00 mg/L as CaCo3 1 Hydroxide Alkalinity < 1.00 mg/L as CaCo3 l Carbonate Alkalinity <4.00 mg/L as CaCo3 4 Bicarbonate Alkalinity < 2.38 mg/L as CaCo3 4 Total Alkalinity

Method Blank (1) QC Batch: 32994

QC Batch: 32994 Date Analyzed: 2006-12-20 Prep Batch: 28613 QC Preparation: 2006-12-18 Analyzed By: RR Prepared By: TS

MDL Units RL Result Flag Parameter 0.002 < 0.000199 mg/L Dissolved Silver

Method Blank (1) QC Batch: 32994

Analyzed By: 32994 Date Analyzed: 2006-12-20 RRQC Batch: Prepared By: TS QC Preparation: 2006-12-18 Prep Batch: 28613

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			MDL		
Parameter	Flag		Result	Units	RL
Dissolved Arsenic			0.00360	mg/L	0.005
Method Blank (1)	QC Batch: 32994				
QC Batch: 32994 Prep Batch: 28613		Date Analyzed: QC Preparation:	2006-12-20 2006-12-18		Analyzed By: RR Prepared By: TS
Trop Baton. 20019		QC 1 Teparation.			Toparod by. To
Parameter	Flag		MDL Result	Units	RL
Dissolved Barium		<	0.000450	mg/L	0.01
Method Blank (1)	QC Batch: 32994				
QC Batch: 32994		Date Analyzed:	2006-12-20		Analyzed By: RR
Prep Batch: 28613		QC Preparation:	2006-12-18		Prepared By: TS
Parameter	Flag		MDL Result	Units	RL
Dissolved Cadmium	7 1005	<	(0.000577	mg/L	0.001
Method Blank (1) QC Batch: 32994 Prep Batch: 28613	QC Batch: 32994	Date Analyzed: QC Preparation:	2006-12-20 2006-12-18		Analyzed By: RR Prepared By: TS
Parameter	Flag		MDL Result	Units	RL
Dissolved Chromium			< 0.00357	mg/L	0.005
Method Blank (1)	QC Batch: 32994				
QC Batch: 32994 Prep Batch: 28613		Date Analyzed: QC Preparation:	2006-12-20 2006-12-18		Analyzed By: RR Prepared By: TS
			MDL		
Parameter Dissolved Copper	Flag	</td <td>Result 0.00127</td> <td>Units mg/L</td> <td>RL 0.0125</td>	Result 0.00127	Units mg/L	RL 0.0125
Method Blank (1)	QC Batch: 32994				
QC Batch: 32994 Prep Batch: 28613		Date Analyzed: QC Preparation:	2006-12-20 2006-12-18		Analyzed By: RR Prepared By: TS

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Parameter	Flag		MDL .esult	Units		RL
Dissolved Lead		< 0.0	0398	mg/L	ı	0.005
Method Blank (1)	QC Batch: 32994					
QC Batch: 32994			2006-12-20		Analyzed By:	RR
Prep Batch: 28613		QC Preparation: 2	2006-12-18		Prepared By:	TS
			MDL			
Parameter	Flag		Result	Units		RL
Dissolved Selenium		<	0.00556	mg/L		0.01
Method Blank (1)	QC Batch: 32994					
QC Batch: 32994	•	Date Analyzed: 2	2006-12-20		Analyzed By:	RR
Prep Batch: 28613			2006-12-18		Prepared By:	TS
		ì	MDL			
Parameter	Flag		Result	Units		RL
Dissolved Zinc		< 0.0	0300	mg/L		0.005
Method Blank (1) QC Batch: 33006 Prep Batch: 28666	QC Batch: 33006	QC Preparation: 2	2006-12-15 2006-12-15		Analyzed By: Prepared By:	WB WB
Parameter	Flag		DL sult	Units		RL
Chloride	1 1005	< 0.0		mg/L		0.5
Sulfate		< 0.0	485	mg/L		0.5
Method Blank (1)	QC Batch: 33017					
QC Batch: 33017 Prep Batch: 28703			2006-12-21 2006-12-21		Analyzed By: Prepared By:	SM SM
Prep Batch. 28703		ŕ			riepared by.	(3141
Parameter	Flag		ADL esult	Units		RL
Ammonia-N	1 116		.820	mg/L		1
Method Blank (1)	QC Batch: 33035					
QC Batch: 33035		,	2006-12-21		Analyzed By:	
Prep Batch: 28613		QC Preparation:	2006-12-18		Prepared By:	TS

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Report Date: January 5, 2007

Trichloroethene (TCE)

Dibromomethane (methylene bromide)

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n	771		MDL	11.5.	RŁ	
Parameter	Flag		Result	Units		
Dissolved Sodium			<0.0309	mg/L	0.5	
Method Blank (1) QC Batel	h: 33073					
QC Batch: 33073 Prep Batch: 28749		Date Analyzed: QC Preparation:	2006-12-22 2006-12-14	Analyzed By Prepared By:		
Demonstra	Elas		MDL Result	Units	RI	
Parameter Total Dissolved Solids	Flag	,	<5.00	mg/L	5	
Total Dissolved Solids			< 5.00	шус		
Method Blank (1) QC Batc	h: 33096					
QC Batch: 33096		Date Analyzed:	2006-12-20	Analyzed By		
Prep Batch: 28772		QC Preparation:	2006-12-20	Prepared By	JC	
			MDL		•	
Parameter		Flag	Result	Units	R	
Bromochloromethane			< 0.0699	μg/L	İ	
Dichlorodifluoromethane			< 0.0598	$\mu \mathrm{g/L}$	1	
Chloromethane (methyl chloride	e)		< 0.230	μ g/L	l	
Vinyl Chloride			< 0.0902	μ g/L	1	
Bromomethane (methyl bromid	e)		< 0.740	μ g/L	5	
Chloroethane			< 0.195	μ g/L	1	
Trichlorofluoromethane			< 0.160	μ g/L	1	
Acetone			< 0.854	μ g/L	1	
Iodomethane (methyl iodide)			< 0.112	μ g/L	5	
Carbon Disulfide			< 0.0764	μ g/L	1	
Acrylonitrile			< 0.184	μ g/L	1	
2-Butanone (MEK)			< 0.394	μ g/L	5	
4-Methyl-2-pentanone (MIBK)			< 0.484	$\mu { m g/L}$	5	
2-Hexanone			< 0.0975	$\mu \mathrm{g/L}$	5	
trans 1,4-Dichloro-2-butene			< 0.420	μg/L	1	
1,1-Dichloroethene			< 0.0736	$\mu \mathrm{g/L}$	1	
Methylene chloride			1.55	$\mu \mathrm{g/L}$	5	
MTBE			< 0.0504	μ g/L]	
trans-1,2-Dichloroethene			< 0.0598	μg/L	1	
1,1-Dichloroethane			< 0.0299	μ g/L	1	
cis-1,2-Dichloroethene			< 0.101	μg/L]	
2,2-Dichloropropane			< 0.0665	μg/L]	
1,2-Dichloroethane (EDC)			< 0.0557	μ g/L]	
Chloroform			< 0.0475	$\mu \mathrm{g/L}$		
1,1,1-Trichloroethane			< 0.0846	μ g/L		
1,1-Dichloropropene			< 0.0423	$\mu \mathrm{g/L}$		
Benzene			< 0.0495	μ g/L		
Carbon Tetrachloride			< 0.121	μg/L		
1,2-Dichloropropane			< 0.0933	μg/L		
Tricklare of hone (TCE)			<0.0755	μα/1		

< 0.0495

< 0.0640

continued ...

 $\mu {\rm g/L} \\ \mu {\rm g/L}$

method blank continued . . .

methoa biank continuea	MDL		
Parameter	Flag Result	Units	RL
Bromodichloromethane	<0.0651	μ g/L	1
2-Chloroethyl vinyl ether	< 0.0031	μg/L μg/L	5
cis-1,3-Dichloropropene	< 0.0640	μg/L μg/L	1
trans-1,3-Dichloropropene	< 0.0504	μg/L	1
Toluene	0.610	μg/L	1
1,1,2-Trichloroethane	<0.106	μg/L μg/L	1
1,3-Dichloropropane	< 0.160	μ g/L μ g/L	1
Dibromochloromethane	<0.0791	μ g/L	1
1,2-Dibromoethane (EDB)	< 0.0460	μg/L	1
Tetrachloroethene (PCE)	< 0.0696	μg/L μg/L	1
Chlorobenzene	<0.0217	μg/L	1
1,1,1,2-Tetrachloroethane	<0.125	μg/L	1
Ethylbenzene	< 0.0566	μg/L	1
m,p-Xylene	< 0.0363	μg/L	1
Bromoform	< 0.0859	μg/L	ì
Styrene	< 0.0394	μg/L	1
o-Xylene	< 0.0505	μ g/L	ĺ
1,1,2,2-Tetrachloroethane	< 0.0672	/ug/L	1
2-Chlorotoluene	< 0.0283	μg/L	, 1
1,2,3-Trichloropropane	< 0.0679	μg/L	1
Isopropylbenzene	< 0.0406	μg/L	1
Bromobenzene	<0.103	μg/L	1
n-Propylbenzene	< 0.0423	μg/L	1
1,3,5-Trimethylbenzene	< 0.0557	μg/L	1
tert-Butylbenzene	< 0.0770	μg/L	1
1,2,4-Trimethylbenzene	< 0.0336	μg/L	1
1,4-Dichlorobenzene (para)	< 0.0672	$\mu { m g/L}$	1
sec-Butylbenzene	< 0.0439	μg/L	1
1,3-Dichlorobenzene (meta)	< 0.0672	μg/L	1
p-Isopropyltoluene	< 0.0513	μ g/L	l
4-Chlorotoluene	< 0.0460	μ g/L	1
1,2-Dichlorobenzene (ortho)	< 0.0629	$\mu \mathrm{g/L}$	1
n-Butylbenzene	< 0.0400	μ g/L	1
1,2-Dibromo-3-chloropropane	< 0.538	$\mu \mathrm{g/L}$	5
1,2,3-Trichlorobenzene	< 0.504	μ g/L	5
1,2,4-Trichlorobenzene	< 0.166	μ g/L	5
Naphthalene	< 0.417	μ g/L	5
Hexachlorobutadiene	< 0.176	μ g/L	5
Isopropyl Alcohol	< 5.00	$\mu { m g/L}$	5
Tert-butyl Alcohol	< 5.00	μg/L	5
1,4-Dioxane	< 5.00	μg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.5	μg/L	l	50.0	99	82.4 - 115
Toluene-d8		49.1	μ g/L	1	50.0	98	89.7 - 108
4-Bromofluorobenzene (4-BFB)		47.2	μg/L	1	50.0	94	84.6 - 114

Parameter

Total Chromium

Flag

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Method Blank (1) OC Batch: 33098 Analyzed By: OC Batch: 33098 Date Analyzed: 2006-12-26 RR QC Preparation: 2006-12-15 Prepared By: Prep Batch: 28574 TS MDL Parameter Flag Result Units RL Total Silver < 0.000274 mg/L 0.002 Method Blank (1) QC Batch: 33098 Analyzed By: OC Batch: 33098 Date Analyzed: 2006-12-26 RRPrep Batch: 28574 QC Preparation: 2006-12-15 Prepared By: TS MDL RL Parameter Flag Result Units Total Arsenic < 0.00489 0.01 mg/L Method Blank (1) QC Batch: 33098 QC Batch: 33098 Date Analyzed: 2006-12-26 Analyzed By: RR TS Prep Batch: 28574 QC Preparation: 2006-12-15 Prepared By: **MDL** Parameter Flag Result Units RL Total Barium < 0.000450 mg/L 0.01 Method Blank (1) OC Batch: 33098 RR QC Batch: 33098 Date Analyzed: 2006-12-26 Analyzed By: Prep Batch: 28574 2006-12-15 Prepared By: QC Preparation: TS **MDL** Parameter Flag Result Units RL Total Cadmium < 0.000268 0.001 mg/L Method Blank (1) QC Batch: 33098 33098 Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: Prepared By: Prep Batch: 28574 QC Preparation: 2006-12-15 TS **MDL**

Result

< 0.00357

Units

mg/L

RL

0.005

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Work Order: 6121323

HELSTF Groundwater Samples

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Analyzed By:

Prepared By:

RR

TS

RR

TS

Method Blank (1) OC Batch: 33098

QC Batch: 33098

Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15

Prep Batch: 28574

MDL

Result Units RL Parameter Flag 0.005 < 0.00127 mg/L Total Copper

Method Blank (1) QC Batch: 33098

Analyzed By: Date Analyzed: 2006-12-26 QC Batch: 33098 Prepared By:

QC Preparation: 2006-12-15 Prep Batch: 28574

MDL

RL Units Parameter Flag Result 0.05 < 0.0229 mg/L Total Phosphorous

QC Batch: 33098 Method Blank (1)

Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: 33098 Prepared By: TS

Prep Batch: 28574 QC Preparation: 2006-12-15

MDL Units RL Flag Result Parameter 0.005 < 0.00310 mg/L Total Lead

QC Batch: 33098 Method Blank (1)

Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: 33098 Prepared By: TS

2006-12-15 Prep Batch: 28574 QC Preparation:

MDL Flag Result Units RL Parameter < 0.00556 0.01 mg/L Total Selenium

Method Blank (1) QC Batch: 33098

Analyzed By: RR 2006-12-26 QC Batch: 33098 Date Analyzed:

TS Prepared By: Prep Batch: 28574 QC Preparation: 2006-12-15

MDL

Result Units RL Parameter Flag 0.005 < 0.000666 mg/L Total Zinc

Work Order: 6121323

HELSTF Groundwater Samples

7 Method Blank (1) OC Batch: 33125 33125 OC Batch: Date Analyzed: 2006-12-27 Analyzed By: RR Prep Batch: 28574 QC Preparation: 2006-12-15 Prepared By: TS **MDL** Parameter Result Units RL Flag < 0.0309 Total Sodium 0.5 mg/L Method Blank (1) QC Batch: 33128 OC Batch: 33128 Date Analyzed: 2006-12-26 Analyzed By: JS Prep Batch: 28801 QC Preparation: 2006-12-26 Prepared By: JS **MDL** Parameter Units RL Flag Result Nitrate and Nitrite as N < 0.0223 mg/L 0.1 Method Blank (1) QC Batch: 33182 QC Batch: 33182 Date Analyzed: 2006-12-27 Analyzed By: WB Prep Batch: Prepared By: 28842 QC Preparation: 2006-12-27 WB **MDL** Parameter Flag Result Units RL Bromide < 0.0429 mg/L 0.2 Method Blank (1) QC Batch: 33182 OC Batch: 33182 Date Analyzed: 2006-12-27 Analyzed By: WB Prep Batch: 28842 QC Preparation: 2006-12-27 Prepared By: **WB MDL** Parameter Flag Result Units RL Nitrite-N < 0.0128 mg/L 0.2

Method Blank (1)

QC Batch: 33182

QC Batch: 33182 Prep Batch: 28842

Nitrate-N

2006-12-27 Date Analyzed: QC Preparation: 2006-12-27

WB Analyzed By: Prepared By: WB

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Parameter Flag

MDL Result Units < 0.0106 mg/L

RL0.2

Work Order: 6121323

HELSTF Groundwater Samples

Method Blank (1)

7

QC Batch: 33182

QC Batch: Prep Batch:

33182 28842 Date Analyzed: QC Preparation: 2006-12-27

2006-12-27

Analyzed By: WB Prepared By:

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WB

MDL

Parameter Flag Fluoride

Result < 0.0119

Units mg/L RL0.2

Duplicates (1)

QC Batch: Prep Batch:

32903 28611

Date Analyzed: QC Preparation:

2006-12-12 2006-12-12

Units

s.u.

Analyzed By: JG

JG

Duplicate Result Result

Duplicate

Result

15800

Result

14400

7.47

Sample

Dilution

I

Dilution

Dilution

1

Matrix

Result

< 0.0000217

Prepared By:

RPD

0

Duplicates (1)

Param

pН

OC Batch:

Param

32909

Date Analyzed:

7.48

2006-12-13

Analyzed By:

DR

RPD

Limit

20

Prep Batch:

28617

QC Preparation:

Sample

Result

15800

2006-12-13

Prepared By:

RPD

0

RPD

95

DR

RPD

Limit

6.7

RPD

Limit

20

Duplicates (1)

Specific Conductance

Total Dissolved Solids

OC Batch:

33073

Date Analyzed:

2006-12-22

Units

μMHOS/cm

Units

mg/L

Spike

Amount

0.00100

Analyzed By: JG

Prep Batch: 28749

QC Preparation:

2006-12-14

Prepared By: JG

Param

Duplicate Sample

Result

14500

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 32862

Date Analyzed:

2006-12-15

Analyzed By: Prepared By:

TS TS

89.4 - 108

Total Mercury

28579

QC Preparation:

Units

mg/L

2006-12-15

Param

LCS Result

Dil.

Rec. Limit Rec.

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

0.000950

Work Order: 6121323 **HELSTF** Groundwater Samples

7

	LCSD			Spike	Matrix		Rec.	Va Va Va	RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Mercury	0.000960	mg/L	1	0.00100	< 0.0000217	96	89.4 - 108	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32895 Prep Batch: 28606

Date Analyzed: 2006-12-16 QC Preparation: 2006-12-16 Analyzed By: JG Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	50.0	μg/L	l	50.0	< 0.0736	100	83.4 - 114
Benzene	52.4	μg/L	1	50.0	< 0.0495	105	83.5 - 115
Trichloroethene (TCE)	51.4	μg/L	1	50.0	< 0.0495	103	91.3 - 111
Toluene	48.3	μg/L	1	50.0	< 0.0736	97	82 - 110
Chlorobenzene	50.5	μg/L	1	50.0	< 0.0217	101	87.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	49.6	μg/L	1	50.0	< 0.0736	99	83.4 - 114	1	20
Benzene	52.8	μ g/L	1	50.0	< 0.0495	106	83.5 - 115	1	20
Trichloroethene (TCE)	52.9	μ g/L	1	50.0	< 0.0495	106	91.3 - 111	3	20
Toluene	48.6	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0736	97	82 - 110	1	20
Chlorobenzene	51.5	μ g/L	l	50.0	< 0.0217	103	87.9 - 109	22	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	51.6	50.7	μg/L	1	50.0	103	101	82.4 - 115
Toluene-d8	50.6	50.7	μ g/L	1	50.0	101	101	89.7 - 108
4-Bromofluorobenzene (4-BFB)	48.9	48.7	μg/L	1	50.0	98	97	84.6 - 114

Laboratory Control Spike (LCS-1)

32994 QC Batch: Prep Batch: 28613 Date Analyzed: QC Preparation: 2006-12-18

2006-12-20

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Silver	0.127	mg/L	l	0.125	< 0.000199	102	86.2 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.124	mg/L	1	0.125	< 0.000199	99	86.2 - 116	2	20

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 24 of 56

Laboratory Control Spike (LCS-1)

OC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18 Analyzed By: RR Prepared By: TS

LCS Matrix Rec. Spike Result Rec. Limit Param Result Units Dil. Amount Dissolved Arsenic 0.464 mg/L 0.500 < 0.00360 93 78.7 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

RPD LCSD Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit RPD Limit 0.500 < 0.00360 78.7 - 116 20 0.467 93 Dissolved Arsenic mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

32994 OC Batch: Prep Batch: 28613 Date Analyzed: QC Preparation: 2006-12-20 2006-12-18 Analyzed By: Prepared By:

RR TS

LCS Spike Matrix Rec. Rec. Result Units Dil. Amount Result Limit Param 0.957 1.00 < 0.000450 96 85 - 114 mg/L Dissolved Barium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

RPD LCSD Spike Matrix Rec. Limit **RPD** Limit Param Result Units Dil. Amount Result Rec. 20 0.942 1.00 < 0.000450 94 85 - 114 2 Dissolved Barium mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32994 Date Analyzed:

2006-12-20

Analyzed By: RR Prepared By: TS

Prep Batch:

28613

2006-12-18 QC Preparation:

Rec.

LCS Spike Matrix Result Units Dil. Amount Result Rec. Limit Param < 0.000577 96 83.3 - 113 Dissolved Cadmium 0.240 mg/L 0.250

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

RPD Rec. LCSD Spike Matrix Result Rec. Limit RPD Limit Param Result Units Dil. Amount 0.236 0.250 < 0.000577 94 83.3 - 113 20 Dissolved Cadmium mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32994 Prep Batch: 28613

2006-12-20 Date Analyzed: QC Preparation: 2006-12-18 Analyzed By: RR Prepared By: TS

7

Work Order: 6121323 HELSTF Groundwater Samples Page Number: 25 of 56

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Chromium	0.0980	mg/L	1	0.100	< 0.00357	98	83 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.0980	mg/L	1	0.100	< 0.00357	98	83 - 112	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Copper	0.126	mg/L	1	0.125	< 0.00127	101	84.3 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.123	mg/L	1	0.125	< 0.00127	98	84.3 - 114	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Lead	0.503	mg/L	1	0.500	< 0.00398	101	81.1 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.479	mg/L	l	0.500	< 0.00398	96	81.1 - 111	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Selenium	0.422	mg/L	l	0.500	< 0.00556	84	69.6 - 111

7

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 26 of 56

RPD **LCSD** Spike Matrix Rec. **RPD** Param Result Units Dil. Amount Result Rec. Limit Limit Dissolved Selenium 0.500 85 69.6 - 111 0 20 0.423 mg/L < 0.00556

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 2006-12-18 QC Preparation:

Analyzed By: RR Prepared By: TS

LCS Spike Matrix Rec. Result Units Dil. Amount Result Rec. Limit Param 0.250 < 0.00300 90 84.7 - 113 Dissolved Zinc 0.225 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Zinc	0.223	mg/L	l	0.250	< 0.00300	89	84.7 - 113	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 28666

33006

Date Analyzed: QC Preparation: 2006-12-15 2006-12-15 Analyzed By: Prepared By:

WB WB

LCS Spike Matrix Rec. Result Units Dil. Amount Result Rec. Limit Param 12.5 90 - 110 12.3 < 0.0181 98 Chloride mg/L 1 12.5 < 0.0485 105 90 - 110 Sulfate 13.1 mg/L 1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	13.1	mg/L	1	12.5	< 0.0181	105	90 - 110	6	20
Sulfate	13.4	mg/L	1	12.5	< 0.0485	107	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

33017 28703 Date Analyzed: QC Preparation:

2006-12-21 2006-12-21 Analyzed By: SM SM Prepared By:

Spike LCS Matrix Rec. Dil. Result Limit Param Result Units Amount Rec. 4.42 5.00 < 0.82088 66 - 122 mg/L Ammonia-N

7

Work Order: 6121323 **HELSTF** Groundwater Samples

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	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Ammonia-N	4.31	mg/L	1	5.00	< 0.820	86	66 - 122	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 28613

33035

Date Analyzed: QC Preparation: 2006-12-18

2006-12-21

Analyzed By: RR

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Sodium	47.0	mg/L	1	50.0	< 0.0309	94	85 ~ 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	48.4	mg/L	1	50.0	< 0.0309	97	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 28772

33096

Date Analyzed:

2006-12-20 QC Preparation: 2006-12-20 Analyzed By: JG

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	49.6	μg/L	1	50.0	< 0.0736	99	83.4 - 114
Benzene	51.2	μ g/L	Ī	50.0	< 0.0495	102	83.5 - 115
Trichloroethene (TCE)	51.0	μ g/L	1	50.0	< 0.0495	102	91.3 - 111
Toluene	46.7	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0736	93	82 - 110
Chlorobenzene	49.2	μ g/L	1	50.0	< 0.0217	98	87.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	50.3	μg/L	1	50.0	< 0.0736	101	83.4 - 114	l	20
Benzene	51.2	μ g/L	1	50.0	< 0.0495	102	83.5 - 115	0	20
Trichloroethene (TCE)	51.4	μ g/L	1	50.0	< 0.0495	103	91.3 - 111	1	20
Toluene	47.0	μ g/L	1	50.0	< 0.0736	94	82 - 110	1	20
Chlorobenzene	49.5	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0217	99	87.9 - 109	ì	20

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.3	48.5	μg/L	1	50.0	97	97	82.4 - 115
Toluene-d8	47.4	47.8	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	95	96	89.7 - 108
4-Bromofluorobenzene (4-BFB)	47.6	47.5	μg/L	1	50.0	95	95	84.6 - 114

Work Order: 6121323 **HELSTF** Groundwater Samples

Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch: 28574

Param

Param

Total Silver

Total Silver

33098

Date Analyzed: QC Preparation:

mg/L

2006-12-26 2006-12-15 Analyzed By: RR Prepared By:

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TS

RPD

Limit

20

Rec.

LCS Result Units

0.120

Spike Dil. Amount 0.125

Matrix Result < 0.000274

Limit Rec. 87.9 - 111

96

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

LCSD Result

0.119

Spike Units Dil. Amount 0.125 mg/L

Matrix Result < 0.000274

Rec. Rec. Limit 87.9 - 111 95

RPD

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

33098

Date Analyzed:

2006-12-26

Analyzed By:

RR

Prep Batch: 28574

QC Preparation: 2006-12-15

Prepared By:

TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Arsenic	0.463	mg/L	1	0.500	<0.00489	93	86.8 - 108

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Arsenic	0.459	mg/L	l	0.500	< 0.00489	92	86.8 - 108	l	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch:

33098 28574 Date Analyzed:

2006-12-26

Analyzed By: RR

QC Preparation: 2006-12-15

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Barium	0.994	mg/L	l	1.00	< 0.000450	99	88.8 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Barium	0.992	mg/L	1	1.00	< 0.000450	99	88.8 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 2006-12-15 QC Preparation:

Analyzed By: RR Prepared By: TS

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Report Date: January 5, 2007

Work Order: 6121323 **HELSTF** Groundwater Samples

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Param	LCS Result	Units	Đil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Cadmium	0.238	mg/L	1	0.250	< 0.000268	95	86.8 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Cadmium	0.238	mg/L	1	0.250	< 0.000268	95	86.8 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15 Analyzed By: RR Prepared By: TS

Matrix Rec. LCS Spike Limit Result Units Dil. Amount Result Rec. Param < 0.00357 86.5 - 115 103 0.103 mg/L 0.100 Total Chromium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Chromium	0.102	mg/L	1	0.100	< 0.00357	102	86.5 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574

Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15

Analyzed By: RR TS Prepared By:

Matrix Rec. LCS Spike Limit Amount Result Rec. Result Units Dil. Param < 0.00127 101 83.4 - 117 0.126 0.125 mg/L Total Copper

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.125	mg/L	1	0.125	< 0.00127	100	83,4 - 117	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15 Analyzed By: RR Prepared By: TS

LCS Spike Matrix Rec. Result Rec. Limit Result Units Dil. Amount Param 0.500 < 0.0229 100 87.3 - 114 0.498 mg/L Total Phosphorous

7

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 30 of 56

RPD Rec. **LCSD** Spike Matrix Limit **RPD** Limit Result Rec. Units Dil. Amount Result Param 87.3 - 114 20 0.500 < 0.0229 93 0.464 mg/L Total Phosphorous

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574

2006-12-26 Date Analyzed: QC Preparation: 2006-12-15 Analyzed By: RR Prepared By: TS

Rec. Matrix Spike LCS Limit Amount Result Rec. Result Units Dil. Param 0.500 < 0.00310 100 83 - 109 0.499 mg/L ĺ Total Lead

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Lead	0.514	mg/L	1	0.500	< 0.00310	103	83 - 109	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15 Analyzed By: RR Prepared By: TS

Matrix Rec. LCS Spike Limit Result Rec. Result Units Dil. Amount Param 0.500 < 0.00556 84 75 - 112 0.421 mg/L Total Selenium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Selenium	0.430	mg/L	l	0.500	< 0.00556	86	75 ~ 112	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33098 Prep Batch: 28574

2006-12-26 Date Analyzed: 2006-12-15 QC Preparation:

Analyzed By: RR TS Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.231	mg/L	1	0.250	< 0.000666	92	82.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.227	mg/L	1	0.250	< 0.000666	91	82.9 - 109	2	20

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 31 of 56

Laboratory Control Spike (LCS-1)

QC Batch:

33125 Prep Batch: 28574

Date Analyzed:

2006-12-27

QC Preparation: 2006-12-15 Analyzed By: RR

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Sodium	56.6	mg/L	ì	50.0	< 0.0309	113	87.1 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	57.1	mg/L	1	50.0	< 0.0309	114	87.1 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch:

33128

Date Analyzed:

2006-12-26

Analyzed By: JS

JS

Prep Batch: 28801

QC Preparation: 2006-12-26

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrate and Nitrite as N	0.152	mg/L	1	0.160	< 0.0223	95	82.2 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate and Nitrite as N	0.160	mg/L	1	0.160	< 0.0223	100	82.2 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

33182

Date Analyzed:

2006-12-27

Analyzed By:

WB WB

Prep Batch: 28842

QC Preparation: 2006-12-27 Prepared By:

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Bromide 2.56 mg/L 2.50 < 0.0429 102 90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Bromide	2.56	mg/L	1	2.50	< 0.0429	102	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

33182

Date Analyzed:

2006-12-27

Analyzed By: WB

Prep Batch: 28842

QC Preparation:

2006-12-27

Prepared By:

WB

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Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 32 of 56

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrite-N	2.46	mg/L	1	2.50	< 0.0128	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	2.54	mg/L	ì	2.50	< 0.0128	102	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33182 Date Analyzed: 2006-12-27 Analyzed By: WB

Prep Batch: 28842

QC Preparation: 2006-12-27

Prepared By: WB

	LCS		•	Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrate-N	2.42	mg/L	l	2.50	< 0.0106	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	2.46	mg/L	1	2.50	< 0.0106	98	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 33182 Prep Batch: 28842 Date Analyzed: QC Preparation: 2006-12-27

2006-12-27

Analyzed By:

WB Prepared By: WB

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Fluoride	2.45	mg/L	1	2.50	< 0.0119	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Fluoride	2,52	mg/L	1	2.50	< 0.0119	101	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111036

QC Batch: 32862 Prep Batch: 28579 Date Analyzed: 2006-12-15 QC Preparation: 2006-12-15 Analyzed By: TS Prepared By: TS

MS Spike Matrix Rec. Limit Param Result Units Dil. Amount Result Rec. 0.000960 0.00100 5e-05 91 49.1 - 137 mg/L Total Mercury

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Work Order: 6121323 HELSTF Groundwater Samples

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Mercury	0.000660	mg/L	l	0.00100	5e-05	61	49.1 - 137	37	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111685

QC Batch: 32895 Prep Batch: 28606 Date Analyzed: 2006-12-16 QC Preparation: 2006-12-16 Analyzed By: JG Prepared By: JG

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	50.3	μg/L	1	50.0	< 0.0736	101	78.7 - 119
Benzene	51.5	$\mu { m g/L}$	1	50.0	< 0.0495	103	75.8 - 125
Trichloroethene (TCE)	49.8	$\mu { m g/L}$	1	50.0	< 0.0495	100	83.6 - 112
Toluene	46.2	μ g/L	1	50.0	< 0.0736	92	81.6 - 115
Chlorobenzene	48.4	μ g/L	1	50.0	< 0.0217	97	83.9 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	50.9	μg/L	l	50.0	< 0.0736	102	78.7 - 119	1	20
Benzene	52.6	$\mu { m g/L}$	1	50.0	< 0.0495	105	75.8 - 125	2	20
Trichloroethene (TCE)	51.1	μ g/L	1	50.0	< 0.0495	102	83.6 - 112	3	20
Toluene	47.0	μ g/L	j	50.0	< 0.0736	94	81.6 - 115	2	20
Chlorobenzene	50.3	μ g/L	1	50.0	< 0.0217	101	83.9 - 113	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	52.5	50.2	μg/L	1	50	105	100	86.6 - 114
Toluene-d8	49.9	49.0	μ g/L	1	50	100	98	91 - 109
4-Bromofluorobenzene (4-BFB)	46.4	45.4	μg/L	1	50	93	91	87.2 - 113

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 32994 Prep Batch: 28613 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18

Analyzed By: RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Silver	0.115	mg/L	1	0.125	< 0.000199	92	90.1 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.116	mg/L	1	0.125	< 0.000199	93	90.1 - 120	l	20

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 34 of 56

Matrix Spike (MS-1) Spiked Sample: 111614

OC Batch: 32994 Prep Batch: 28613 Date Analyzed: QC Preparation:

2006-12-20 2006-12-18

Analyzed By: RR Prepared By:

TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Arsenic	0.470	mg/L	1	0.500	< 0.00360	94	75 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Arsenic	0.439	mg/L	1	0.500	< 0.00360	88	75 - 114	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

32994 QC Batch:

Date Analyzed: 2006-12-20 QC Preparation: 2006-12-18 Analyzed By: RR TS Prepared By:

Prep Batch: 28613

MS Spike Matrix Rec. Limit Param Result Units Dil. Amount Result Rec. 1.00 0.01 80 75 - 125 0.810 mg/L 1 Dissolved Barium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Barium	0.820	mg/L	l	1.00	0.01	81	75 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 32994 Prep Batch: 28613

Date Analyzed:

2006-12-20 2006-12-18 QC Preparation:

Analyzed By: RR Prepared By: TS

Rec. MS Spike Matrix Limit Result Units Dil. Amount Result Rec. Param 75 - 112 < 0.000577 78 Dissolved Cadmium 0.195 mg/L 0.250

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Cadmium	0.192	mg/L	1	0.250	< 0.000577	77	75 - 112	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

OC Batch: 32994

2006-12-20 Date Analyzed: QC Preparation: 2006-12-18

Analyzed By: RR Prepared By: TS

Prep Batch:

28613

Work Order: 6121323 **HELSTF** Groundwater Samples

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Dissolved Chromium	0.0820	mg/L	1	0.100	< 0.00357	82	75 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.0870	mg/L	1	0.100	< 0.00357	87	75 - 121	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 32994 Prep Batch: 28613

2006-12-20 Date Analyzed: QC Preparation: 2006-12-18

Analyzed By: RRPrepared By: TS

MS Spike Matrix Rec. Amount Result Rec. Limit Result Units Dil. Param 81.5 - 125 0.125 0.003 92 0.118 mg/L Dissolved Copper

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.117	mg/L	1	0.125	0.003	91	81.5 - 125	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

32994 OC Batch:

Date Analyzed: 2006-12-20 Analyzed By: RR Prepared By: TS

28613 Prep Batch:

QC Preparation: 2006-12-18

Rec. MS Spike Matrix Limit Units Dil. Amount Result Rec. Result Param < 0.00398 99 75 - 111 0.500 Dissolved Lead 0.495 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.486	mg/L]	0.500	< 0.00398	97	75 - 111	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

QC Batch: 32994 Date Analyzed:

2006-12-20

Analyzed By: RR

Prep Batch: 28613

QC Preparation: 2006-12-18 Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Selenium	0.440	mg/L	1	0.500	< 0.00556	88	75 - 118

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Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 36 of 56

RPD Rec. Spike Matrix **MSD** RPD Limit Rec. Limit Units Dil. Amount Result Result Param 75 - 118 20 0.500 < 0.00556 92 4 0.458 Dissolved Selenium mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

32994 QC Batch: Prep Batch: 28613

2006-12-20 Date Analyzed: QC Preparation: 2006-12-18 Analyzed By: RR TS Prepared By:

Rec. Matrix MS Spike Limit Result Rec. Result Units Dil. Amount Param < 0.00300 94 80.4 - 120 0.236 0.250 mg/L Dissolved Zinc

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

RPD Rec. MSD Spike Matrix **RPD** Units Dil. Amount Result Rec. Limit Limit Result Param 80.4 - 120 20 < 0.00300 91 4 0.227 mg/L 0.250 Dissolved Zinc

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111623

OC Batch: 33006 Prep Batch: 28666

2006-12-15 Date Analyzed: OC Preparation: 2006-12-15

Analyzed By: WB Prepared By: WB

Rec. MS Spike Matrix Result Limit Result Units Dil. Amount Rec. Param 102 10 - 6384 5000 62500 4650 68600 mg/L Chloride 86.2 - 117 100 9630 5000 62500 Sulfate 72400 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

RPD Rec. MSD Spike Matrix RPD Limit Limit Dil. Result Rec. Units Amount Param Result 20 10 - 6384 4650 103 Chloride 69300 mg/L 5000 62500 ì 86.2 - 117 2 20 5000 62500 9630 103 74100 mg/L Sulfate

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111619 Matrix Spike (MS-1)

QC Batch: 33017 Prep Batch: 28703 Date Analyzed: 2006-12-21 QC Preparation: 2006-12-21

Analyzed By: SM Prepared By: SM

Rec. MS Spike Matrix Dil. Amount Result Rec. Limit Units Result Param 58 - 134 5.00 < 0.820 80 3.98 mg/LAmmonia-N

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 37 of 56

MSD Matrix Rec. RPD Spike **RPD** Result Units Dil. Amount Result Rec. Limit Limit Param 58 - 134 12 20 3.53 5.00 < 0.820 Ammonia-N mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 33035 Prep Batch: 28613 Date Analyzed: 2006-12-21 QC Preparation: 2006-12-18 Analyzed By: RR Prepared By: TS

MS Matrix Rec. Spike Param Result Units Dil. Amount Result Rec. Limit Dissolved Sodium 2040 50.0 2000 80 75 - 125 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	2040	mg/L	1	50.0	2000	80	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111624 Matrix Spike (MS-1)

QC Batch: 33096 Prep Batch: 28772 Date Analyzed: 2006-12-20 QC Preparation: 2006-12-20 Analyzed By: JG JG Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	48.5	μg/L	1	50.0	< 0.0736	97	78.7 - 119
Benzene	49.7	$\mu { m g/L}$	1	50.0	< 0.0495	99	75.8 - 125
Trichloroethene (TCE)	49.8	μg/L	1	50.0	< 0.0495	100	83.6 - 112
Toluene	45.8	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0736	92	81.6 - 115
Chlorobenzene	47.7	$\mu { m g/L}$	1	50.0	< 0.0217	95	83.9 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1.1-Dichloroethene	T	n/a	μg/L	1	50.0	< 0.0736	0	78.7 - 119	200	20
Benzene	2	n/a	$\mu \mathrm{g/L}$	1	50.0	< 0.0495	0	75.8 - 125	200	20
Trichloroethene (TCE)	3	n/a	μg/L	1	50.0	< 0.0495	0	83.6 - 112	200	20
Toluene	4	n/a	$\mu \mathrm{g}/\mathrm{L}$	j	50.0	< 0.0736	0	81.6 - 115	200	20
Chlorobenzene	5	n/a	$\mu { m g/L}$	1	50.0	< 0.0217	0	83.9 - 113	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

¹RPD is out of range because a matrix spike duplicate was not prepared.

²RPD is out of range because a matrix spike duplicate was not prepared.

³RPD is out of range because a matrix spike duplicate was not prepared.

⁴RPD is out of range because a matrix spike duplicate was not prepared.

⁵RPD is out of range because a matrix spike duplicate was not prepared.

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Work Order: 6121323 **HELSTF** Groundwater Samples

matrix spikes continued ... MS **MSD** Rec. MS **MSD** Spike Dil. Amount Rec. Limit Result Result Units Rec. Surrogate MS **MSD** Rec. Spike MS **MSD** Limit Dil. Amount Rec. Result Result Units Rec. Surrogate 86.6 - 114 50 97 0 48.7 μ g/L 1 Dibromofluoromethane n/a 0 91 - 109ĺ 50 96 48.1 n/a μ g/L Toluene-d8 87.2 - 113 50 97 0 48.4 1 4-Bromofluorobenzene (4-BFB) n/a μ g/L

Spiked Sample: 111614 Matrix Spike (MS-1)

QC Batch: 33098 Prep Batch: 28574

2006-12-26 Date Analyzed: QC Preparation: 2006-12-15

Analyzed By: RR Prepared By: TS

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Spike Matrix Rec. MS Result Rec. Limit Amount Param Result Units Dil. 88.2 - 114 0.119 0.125 < 0.000274 95 mg/L Total Silver

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Silver	0.116	mg/L	1	0.125	< 0.000274	93	88.2 - 114	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

OC Batch: 33098 Prep Batch: 28574

Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15 Analyzed By: RR Prepared By: TS

MS Spike Matrix Rec. Amount Result Rec. Limit Result Units Dil. Param < 0.00489 96 75.9 - 116 0.500 0.478 mg/L Total Arsenic

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Arsenic	0.498	mg/L	1	0.500	< 0.00489	100	75.9 - 116	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15

Analyzed By: RR Prepared By: TS

⁶RPD is out of range because a matrix spike duplicate was not prepared.

⁷RPD is out of range because a matrix spike duplicate was not prepared.

⁸RPD is out of range because a matrix spike duplicate was not prepared.

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 39 of 56

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Total Barium	0.827	mg/L	l	1.00	0.01	82	64.9 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Barium	0.858	mg/L	1	1.00	0.01	85	64.9 - 129	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

OC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 2006-12-15 QC Preparation:

Analyzed By: RR TS Prepared By:

Rec. Matrix MS Spike Limit Dil. Amount Result Rec. Units Result Param < 0.000268 79 66.5 - 121 0.250 0.197 mg/L Total Cadmium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Cadmium	0.211	mg/L	1	0.250	< 0.000268	84	66.5 - 121	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

QC Batch: 33098 28574 Prep Batch:

2006-12-26 Date Analyzed: QC Preparation: 2006-12-15

Analyzed By: RR Prepared By: TS

Rec. Spike Matrix MS Result Rec. Limit Amount Units Dil. Result Param 86 69.2 - 129 < 0.00357 0.100 0.0860 mg/L Total Chromium

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Chromium	0.0910	mg/L	1	0.100	< 0.00357	91	69.2 - 129	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

33098 QC Batch: 28574 Prep Batch:

Date Analyzed: QC Preparation:

2006-12-26 2006-12-15 Analyzed By: RRTS

Prepared By:

Rec. Spike Matrix MS Limit Result Rec. Dil. Amount Result Units Param 83.8 - 118 94 0.125 < 0.00127 0.118 mg/L Total Copper

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 40 of 56

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.120	mg/L	1	0.125	< 0.00127	96	83.8 - 118	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: QC Preparation:

2006-12-26 2006-12-15

Analyzed By: Prepared By:

RR TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.469 0.500 0.028 88 70.1 - 115 Total Phosphorous mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Phosphorous	0.484	mg/L	1	0.500	0.028	91	70.1 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 33098 Prep Batch: 28574

Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15 Analyzed By: RR

Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Lead	0.461	mg/L	1	0.500	< 0.00310	92	71.9 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Lead	0.489	mg/L	l	0.500	< 0.00310	98	71.9 - 115	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111614 Matrix Spike (MS-1)

QC Batch: 33098 Prep Batch: 28574 Date Analyzed: 2006-12-26 QC Preparation: 2006-12-15

Analyzed By: RRPrepared By: TS

MS Matrix Rec. Spike Limit Param Result Units Dil. Amount Result Rec. 0.501 0.500 < 0.00556 100 66.8 - 116 Total Selenium mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Selenium	0.530	mg/L	1	0.500	< 0.00556	106	66.8 - 116	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Matrix Spike (MS-1)

Spiked Sample: 111614

QC Batch: Prep Batch:

33098 28574

Date Analyzed: QC Preparation: 2006-12-15

2006-12-26

Analyzed By: RR

Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.228	mg/L	1	0.250	< 0.000666	91	75.5 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.225	mg/L	1	0.250	< 0.000666	90	75.5 - 113	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 111614

QC Batch: 33125 Prep Batch: 28574 Date Analyzed: QC Preparation:

2006-12-27 2006-12-15 Analyzed By: RR

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Sodium	2150	mg/L	1	50.0	2100	100	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	2150	mg/L	1	50.0	2100	100	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111614

QC Batch: 33128 Prep Batch: 28801 Date Analyzed: 2006-12-26 2006-12-26 QC Preparation:

Analyzed By: JS JS Prepared By:

Matrix Rec. Spike MS Limit Amount Result Rec. Units Dil. Param Result -10 25.4 - 158 80.0 56.9 48.9 mg/L 500 Nitrate and Nitrite as N

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate and Nitrite as N	54.5	mg/L	500	500	56.9	0	25.4 - 158	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

⁹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

¹⁰ Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 42 of 56

Matrix Spike (MS-1) Spiked Sample: 112625

QC Batch: 33182 Date Analyzed:

2006-12-27

Analyzed By:

WB WB

Prep Batch: 28842

QC Preparation:

2006-12-27

Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Bromide	130	mg/L	50	125	<2.14	104	95.4 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Bromide	129	mg/L	50	125	<2.14	103	95.4 - 114	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 112625

OC Batch: 33182 Prep Batch: 28842 Date Analyzed: QC Preparation:

2006-12-27 2006-12-27 Analyzed By: WB Prepared By:

WB

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Nitrite-N 137 50 125 < 0.640 110 58.3 - 151 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	129	mg/L	50	125	< 0.640	103	58.3 - 151	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 112625

OC Batch: 33182 Prep Batch: 28842 Date Analyzed: QC Preparation:

2006-12-27 2006-12-27 Analyzed By: WB

Prepared By:

WB

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrate-N	294	mg/L	50	125	181	90	85.7 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil,	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	292	mg/L	50	125	181	89	85.7 - 123	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 112625

QC Batch: 33182 Prep Batch: 28842 Date Analyzed: 2006-12-27 QC Preparation: 2006-12-27

Analyzed By: WB Prepared By: WB 7

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continued ...

Param		MS Resu	lt Units	Dil.	Spike Amount	Mat Res	ult Rec		Rec. Limit
Fluoride		121	mg/L	50	125	8	90	73	.4 - 119
Percent recovery is ba	sed on the s	spike result. RPI	D is based on the s	pike and spike	duplicate	result.			
		MSD		Spike	Matrix	_	Rec.		RPD
Param		Result	Units Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Fluoride		126	mg/L 50	125	8	94	73.4 - 119	4	20
Percent recovery is ba	sed on the s	spike result. RP	D is based on the s	pike and spike	e duplicate	result.			
Standard (CCV-1)									
QC Batch: 32862			Date Analyzed:	2006-12-15	;		A	malyzed B	y: TS
			CCVs	CCVs	CCV	s	Percent		
			True	Found	Perce		Recovery		Date
Param	Flag	Units	Conc.	Conc.	Recove	ery	Limits		nalyzed
Total Mercury		mg/L	0.00100	0.00101	101		80 - 120	200	06-12-15
Standard (CCV-2)									
QC Batch: 32862			Date Analyzed	2006-12-15	3		A	analyzed E	sy: TS
			CCVs	CCVs	CCV	s	Percent		
			True	Found	Perce		Recovery		Date
Param	Flag	Units	Conc.	Cone.	Recove		Limits		nalyzed
Total Mercury		mg/L	0.00100	0.00102	102		80 - 120	200	06-12-15
Standard (CCV-1)									
QC Batch: 32895			Date Analyzed	: 2006-12-16	5		1	Analyzed E	By: JG
			CCVs	CCVs	CC	√s	Percent		
			True	Found	Perce	ent	Recovery		Date
Param	Fla		Conc.	Conc.	Recov		Limits		nalyzed
Vinyl Chloride		μg/L	50.0	54.8	110		80 - 120		06-12-16
1,1-Dichloroethene		μ g/L	50.0	50.7	10		80 - 120		06-12-16
Chloroform		μg/L	50.0	49.4	99		80 - 120		06-12-16
1,2-Dichloropropane		μg/L	50.0	51.3	103		80 - 120		06-12-16
Toluene		$\mu { m g/L}$	50.0	47.9	96		80 - 120		06-12-16
Chlorobenzene		μg/L	50.0	51.9	10		80 - 120		06-12-16
Ethylbenzene		μg/L	50.0	53.9	10	8	80 - 120	200	06-12-16
Standard (CCV-2)									
QC Batch: 32895			Date Analyzed	: 2006-12-1	6		1	Analyzed I	Зу: JG
			CCVs	CCVs	CC.	Vs	Percent		
			True	Found	Perc	ent	Recovery		Date
Param	Fla	g Units	Conc.	Conc.	Reco	very	Limits	Α	nalyzed
Vinyl Chloride		μg/L	50.0	57.1	11	A	80 - 120	20	06-12-10

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<i>sumuun</i>	сониниса		٠.

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
1,1-Dichloroethene		μg/L	50.0	51.1	102	80 - 120	2006-12-16
Chloroform		μ g/L	50.0	50.8	102	80 - 120	2006-12-16
1,2-Dichloropropane		μ g/L	50.0	51.8	104	80 - 120	2006-12-16
Toluene		μg/L	50.0	48.8	98	80 - 120	2006-12-16
Chlorobenzene		$\mu { m g/L}$	50.0	51.8	104	80 - 120	2006-12-16
Ethylbenzene		μ g/L	50.0	53.8	108	80 - 120	2006-12-16

Standard (ICV-1)

QC Batch: 32903

Date Analyzed: 2006-12-12

Analyzed By: JG

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.94	99	98.8 - 101	2006-12-12

Standard (CCV-1)

QC Batch: 32903

Date Analyzed: 2006-12-12

Analyzed By: JG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.97	100	98.8 - 101	2006-12-12

Standard (ICV-1)

QC Batch: 32909

Date Analyzed: 2006-12-13

Analyzed By: DR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		μMHOS/cm	1410	1410	100	96.7 - 108	2006-12-13

Standard (CCV-1)

QC Batch: 32909

Date Analyzed: 2006-12-13

Analyzed By: DR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		μMHOS/cm	1410	1420	100	96.7 - 108	2006-12-13

Standard (ICV-I)

QC Batch: 32918

Date Analyzed: 2006-12-15

Analyzed By: JG

HELSTF Groundwater Samples

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			ICVs	ICVs	ICVs	Percent	
			True		Percent	Recovery	Date
Param	Flag	Units	Conc		Recovery	Limits	Analyzed
Hydroxide Alkalinity	1146	mg/L as CaC		<1.00		0 - 105	2006-12-15
Carbonate Alkalinity		mg/L as CaC		240		0 - 105	2006-12-15
Bicarbonate Alkalinity		mg/L as CaC		10.0		0 - 105	2006-12-15
Fotal Alkalinity		mg/L as Ca(250	100	93.7 - 99.9	2006-12-15
total Alkaninty		mg/L to Cat	200 200				
Standard (CCV-1)							
QC Batch: 32918		ï	Date Analyzed:	2006-12-15		Ana	lyzed By: JG
			CCV	s CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc	. Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as Ca	Co3 0.00	<1.00		0 - 105	2006-12-15
Carbonate Alkalinity		mg/L as Cat				0 - 105	2006-12-15
Bicarbonate Alkalinity		mg/L as Ca				0 - 105	2006-12-15
Total Alkalinity		mg/L as Ca			99	93.7 - 99.9	2006-12-15
Standard (ICV-1)							
QC Batch: 32994		I	Date Analyzed:	2006-12-20		Ana	lyzed By: RR
			ICVs	lCVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Silver		mg/L	0.125	0.122	98	90 - 110	2006-12-20
Standard (ICV-1)							
QC Batch: 32994		:	Date Analyzed:	2006-12-20		Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Arsenic		mg/L	1.00	0.974	97	90 - 110	2006-12-20
Standard (ICV-1)							
QC Batch: 32994			Date Analyzed:	2006-12-20		Ana	lyzed By: RR
			1CVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
		* * * .	61	Conc.	Recovery	Limits	Analyzed
Param	Flag	Units	Conc.	Conc.	99	90 - 110	2006-12-20

Standard (ICV-1)

Date Analyzed: 2006-12-20 QC Batch: 32994

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	1.		
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Report Date: January 3	5, 2007			der. 0121323	1	1 age 14	umper. 40 or 50
7			HELSTY Gro	undwater Samp	oles		
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Cadmium	1 110	mg/L	1.00	0.954	95	95 - 105	2006-12-20
			200				
Standard (ICV-1)							
QC Batch: 32994			Date Analyzed:	2006-12-20		Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	0.954	95	90 - 110	2006-12-20
Standard (ICV-1)							
QC Batch: 32994			Date Analyzed:	2006-12-20		Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Copper	1 1115	mg/L	1.00	0.976	98	90 - 110	2006-12-20
Standard (ICV-1) QC Batch: 32994			Date Analyzed:	2006-12-20		Ana	ılyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Lead	1 mg	mg/L	1.00	1.00	100	90 - 110	2006-12-20
Standard (ICV-1) QC Batch: 32994		J	Date Analyzed:			Ana	ilyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Selenium	<u> </u>	mg/L	1.00	0.970	97	90 - 110	2006-12-20
Standard (ICV-1) QC Batch: 32994			Date Analyzed:	2006-12-20		Ana	nlyzed By: RR

ICVs

True

Conc.

1.00

Flag

Param

Dissolved Zinc

Units

mg/L

ICVs

Found

Conc.

1.00

ICVs

Percent

Recovery

100

Percent

Recovery

Limits

90 - 110

Date

Analyzed

2006-12-20

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Standard	(CCV-	1)
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QC Batch: 32994

Date Analyzed: 2006-12-20

Analyzed By: RR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Silver		mg/L	0.125	0.121	97	90 - 110	2006-12-20

Standard (CCV-1)

QC Batch: 32994

Date Analyzed: 2006-12-20

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Arsenic		mg/L	1.00	0.929	93	90 - 110	2006-12-20

Standard (CCV-1)

QC Batch: 32994

Date Analyzed: 2006-12-20

Analyzed By: RR

	CCVs C	CCVs	CCVs	Percent			
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Barium		mg/L	1.00	0.959	96	90 - 110	2006-12-20

Standard (CCV-1)

QC Batch: 32994

Date Analyzed: 2006-12-20

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Cadmium		mg/L	1.00	0.928	93	90 - 110	2006-12-20

Standard (CCV-1)

QC Batch: 32994

Date Analyzed: 2006-12-20

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	0.923	92	90 - 110	2006-12-20

Standard (CCV-1)

QC Batch: 32994

Date Analyzed: 2006-12-20

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90 - 110

90 - 110

104

110

2006-12-15

2006-12-15

7				Groundwater Sa				
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Dissolved Copper	1778	mg/L	1.00	0.952	95	90 - 110	2006-12-20	
Standard (CCV-1)							
QC Batch: 32994	4		Date Analyzo	ed: 2006-12-2	0	Ana	lyzed By: RR	
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Dissolved Lead		mg/L	1.00	0.966	97	90 - 110	2006-12-20	
Standard (CCV-1	1)							
QC Batch: 3299	4		Date Analyz	ed: 2006-12-2	20	Ana	lyzed By: RR	
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Dissolved Seleniu		mg/L	1.00	0.955	96	90 - 110	2006-12-20	
Standard (CCV-			Date Analyz	zed: 2006-12-2	20	Ana	alyzed By: RR	
QC Batch. 3299	· ·· τ		·					
			CCVs	CCVs	CCVs	Percent Recovery	Date	
n	201	T for law	True	Found Conc.	Percent Recovery	Limits	Analyzed	
Param Dissolved Zinc	Flag	Units mg/L	Conc. 1.00	0.982	98	90 - 110	2006-12-20	
Standard (ICV-1)							
QC Batch: 3300)6		Date Analyz	zed: 2006-12-	15	Ana	llyzed By: WB	
			ICVs	ICVs	ICVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride		mg/L	12.5	12.2	98	90 - 110	2006-12-13	
Sulfate		mg/L	12.5	13.0	104	90 - 110	2006-12-15	
Standard (CCV-	-1)							
QC Batch: 330	06		Date Analy:	zed: 2006-12-	15	Ana	alyzed By: WB	
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chlorida		mg/L	12.5	13.0	104	90 - 110	2006-12-1	

mg/L

mg/L

Chloride

Sulfate

12.5

12.5

13.0

13.7

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Standard (ICV-1)

QC Batch: 33017

Date Analyzed: 2006-12-21

Analyzed By: SM

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Ammonia-N		mg/L	5.00	4.98	100	85 - 115	2006-12-21

Standard (CCV-1)

QC Batch: 33017

Date Analyzed: 2006-12-21

Analyzed By: SM

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Ammonia-N		mg/L	5.00	4.82	96	85 - 115	2006-12-21

Standard (ICV-1)

QC Batch: 33035

Date Analyzed: 2006-12-21

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Sodium		mg/L	50.0	52.0	104	90 - 110	2006-12-21

Standard (CCV-1)

QC Batch: 33035

Date Analyzed: 2006-12-21

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Sodium	-	mg/L	50.0	54.0	108	90 - 110	2006-12-21

Standard (ICV-1)

QC Batch: 33073

Date Analyzed: 2006-12-22

Analyzed By: JG

			1CVs	ICVs	ICVs	Percent	Date
Param	Flag	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Analyzed
Total Dissolved Solids		mg/L	1000	1000	100	94.4 - 106	2006-12-22

Standard (CCV-1)

QC Batch: 33073

Date Analyzed: 2006-12-22

Analyzed By: JG

Work Order: 6121323 **HELSTF** Groundwater Samples

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids	<u>*</u>	mg/L	1000	977	98	94.4 - 106	2006-12-22

Standard (CCV-1)

QC Batch: 33096

Date Analyzed: 2006-12-20

Analyzed By: JG

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		μg/L	50.0	45.4	91	80 - 120	2006-12-20
1,1-Dichloroethene		μ g/L	50.0	47.3	95	80 - 120	2006-12-20
Chloroform		$\mu { m g/L}$	50.0	46.2	92	80 - 120	2006-12-20
1,2-Dichloropropane		μg/L	50.0	47.1	94	80 - 120	2006-12-20
Toluene		μg/L	50.0	44.4	89	80 - 120	2006-12-20
Chlorobenzene		μ g/L	50.0	47.0	94	80 - 120	2006-12-20
Ethylbenzene		$\mu { m g/L}$	50.0	48.5	97	80 - 120	2006-12-20

Standard (ICV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Silver		mg/L	0.125	0.127	102	90 - 110	2006-12-26

Standard (ICV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Arsenic		mg/L	1.00	1.00	100	90 - 110	2006-12-26

Standard (ICV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			ICVs	ICVs	1CVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Barium		mg/L	1.00	1.01	101	90 - 110	2006-12-26

Standard (ICV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Total Sclenium

mg/L

1.00

0.983

98

Work Order: 6121323

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90 - 110

2006-12-26

ICVs ICVs ICVs Percent Found Percent Recovery Date True Analyzed Units Conc. Conc. Recovery Limits Param Flag 97 90 - 110 2006-12-26 0.971 Total Cadmium mg/L 1.00 Standard (ICV-1) Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: 33098 **ICVs ICVs** Percent **ICVs** Recovery Date True Found Percent Analyzed Conc. Recovery Limits Param Flag Units Conc. 90 - 110 2006-12-26 Total Chromium mg/L 1.00 0.967 97 Standard (ICV-1) Analyzed By: RR Date Analyzed: 2006-12-26 QC Batch: 33098 **ICVs ICVs ICVs** Percent Recovery Date True Found Percent Analyzed Conc. Recovery Limits Units Conc. Param Flag 90 - 110 2006-12-26 Total Copper mg/L 1.00 1.00 100 Standard (ICV-1) Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: 33098 **ICVs ICVs ICVs** Percent Percent Date True Found Recovery Analyzed Param Flag Units Conc. Conc. Recovery Limits 4.90 98 90 - 110 2006-12-26 5.00 **Total Phosphorous** mg/L Standard (ICV-1) Date Analyzed: 2006-12-26 Analyzed By: RR QC Batch: 33098 **ICVs ICVs ICVs** Percent Found Percent Recovery Date True Limits Analyzed Units Conc. Conc. Recovery Param Flag 90 - 110 2006-12-26 Total Lead mg/L 1.00 1.02 102 Standard (ICV-1) Analyzed By: RR Date Analyzed: 2006-12-26 QC Batch: 33098 **ICVs ICVs ICVs** Percent Recovery Date True Found Percent Limits Analyzed Units Conc. Conc. Recovery Param Flag

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Standard (ICV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Zinc		mg/L	1.00	1.04	104	90 - 110	2006-12-26

Standard (CCV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Silver		mg/L	0.125	0.120	96	90 - 110	2006-12-26

Standard (CCV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Arsenic		mg/L	1.00	0.914	91	90 - 110	2006-12-26

Standard (CCV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Barium		mg/L	1.00	0.952	95	90 - 110	2006-12-26

Standard (CCV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Analyzed By: RR

Demon	Floo	Linita	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Param	Flag	Units	Conc.				-
Total Cadmium		mg/L	1.00	0.917	92	90 - 110	2006-12-26

Standard (CCV-1)

QC Batch: 33098

Date Analyzed: 2006-12-26

Work Order: 6121323 **HELSTF** Groundwater Samples Page Number: 53 of 56

/			nerstr	Oloundwater 5	ampics		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	1.00	0.907	91	90 - 110	2006-12-26
Standard (CCV-1)							
QC Batch: 33098			Date Analyz	zed: 2006-12-2	26	Ana	lyzed By: RR
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Copper		mg/L	1.00	0.932	93	90 - 110	2006-12-26
Standard (CCV-1)							
QC Batch: 33098			Date Analyz	zed: 2006-12-	26	Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Phosphorous		mg/L	5.00	4.60	92	90 - 110	2006-12-26
Standard (CCV-1)							
QC Batch: 33098			Date Analy	zed: 2006-12-	26	Ana	alyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Lead		mg/L	1.00	0.959	96	90 - 110	2006-12-26
Standard (CCV-1)							
QC Batch: 33098			Date Analy	zed: 2006-12-	-26	An	alyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Selenium		mg/L	1.00	0.947	95	90 - 110	2006-12-26
Standard (CCV-1))						
QC Batch: 33098	}		Date Analy	yzed: 2006-12	-26	An	alyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed

mg/L

Total Zinc

1.00

0.971

97

90 - 110

2006-12-26

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Standard (ICV-1)

7

QC Batch: 33125

Date Analyzed: 2006-12-27

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	51.7	103	90 - 110	2006-12-27

Standard (CCV-1)

QC Batch: 33125

Date Analyzed: 2006-12-27

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	48.6	97	90 - 110	2006-12-27

Standard (ICV-1)

QC Batch: 33128

Date Analyzed: 2006-12-26

Analyzed By: JS

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrate and Nitrite as N		mg/L	0.160	0.181	113	85 - 115	2006-12-26

Standard (CCV-1)

QC Batch: 33128

Date Analyzed: 2006-12-26

Analyzed By: JS

			CCVs	CCVs	CCVs	Percent	T
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrate and Nitrite as N		mg/L	0.160	0.149	93	85 - 115	2006-12-26

Standard (ICV-1)

QC Batch: 33182

Date Analyzed: 2006-12-27

Analyzed By: WB

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Bromide		mg/L	5.00	5.03	101	90 - 110	2006-12-27

Standard (ICV-1)

QC Batch: 33182

Date Analyzed: 2006-12-27

Analyzed By: WB

HELSTF Groundwater Samples

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							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
			ICVs	ICVs	ICVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Nitrite-N		mg/L	1.13	1.23	109	90 - 110	2006-12-27		
Standard (IC	CV-1)								
QC Batch: 33182			Date Ana	lyzed: 2006-12	Analyzed By: WB				
			ICVs	ICVs	ICVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Vitrate-N		mg/L	1.13	1.24	110	90 - 110	2006-12-27		
Standard (IC	CV-1)								
QC Batch: 33182			Date Ana	Date Analyzed: 2006-12-27			Analyzed By: WB		
			ICVs	ICVs	ICVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
luoride		mg/L	5.00	4.88	98	90 - 110	2006-12-27		
QC Batch: 33182		Date Ana	llyzed: 2006-12		Analyzed By: WE				
			CCVs	CCVs	CCVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Bromide		mg/L	2.50	2.55	102	90 - 110	2006-12-27		
Standard (C	CCV-1)								
QC Batch: 33182			Date Ana	ilyzed: 2006-12	2-27	Analyzed By: W			
			CCVs	CCVs	CCVs	Percent	_		
	-0.4		True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
		mg/L	2.50	2.45	98	90 - 110	2006-12-27		
Nitrite-N									
	CCV-1)								
Standard (C			Date Ana	alyzed: 2006-12	2-27	Ana	ılyzed By: WB		
Nitrite-N Standard (C			Date Ana CCVs	alyzed: 2006-12 CCVs	2-27 CCVs	Ana Percent	ılyzed By: WB		
Standard (C				-			ılyzed By: WB Date		
Standard (C		Units	CCVs	CCVs	CCVs	Percent			

Work Order: 6121323 HELSTF Groundwater Samples Page Number: 56 of 56

Standard (CCV-1)

QC Batch: 33182

Date Analyzed: 2006-12-27

Analyzed By: WB

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Fluoride		mg/L	2.50	2.60	104	90 - 110	2006-12-27